

DRAFT Monitoring and Reporting
Program for the California-
Coastal Marinas Permit issued by
the Water Resources Control
Board

CalEPA Room 620

May 20, 2009

9 am – 2 pm



gating to Clean W

And the Marina Pollutant Prevention Plan (MPPP) as your Map.

When used properly, these tools can help you navigate towards clean waters.

Major Elements of the MRP & MPPPP



Monitoring and Reporting Program (MRP)

- Surface Water Quality Data.
- Sediment Quality Data.
- Spill and Illicit Discharge Log.
- Data Assessment.
- Reporting.

Marina Pollution Prevention Plan (MPPPP)

- Site Map.
- Activities Identification and Description.
- Assessment of Pollutant Discharge Potential.
- Management Practices (MPs).
- Implementation.
- Reporting.

Major Elements Needed in a Sampling and Analysis Plan (SAP)

(from Table 2 of Section 3.3 Group B - Data Generation and Acquisition in [EPA QA/G-5S](#))

- Sampling Process Design.
- Sampling Methods.
- Sampling Handling and Custody.
- Analytical Methods.
- Quality Control.
- Instrument/Equipment Testing, Inspection, and Maintenance.
- Instrument/Equipment Calibration and Frequency.
- Inspection/Acceptance of Supplies and Consumables.
- Non-direct Measurements.
- Data Management.

SAP – Sampling Process Design

Describes the experimental data collection activities for the permit, the following elements are required:

- Design and rational of the sampling network based on a conceptual model,
- Types and numbers of samples required,
- Sampling stations (locations) and frequency of sample collection activities,
- Sample matrices (sediment or water), and
- Measurement Parameters (dissolved copper, color, clarity, etc.).

SAP – Sampling Methods

The following Policies describe the sampling methods in detail.

- Marinas located in enclosed bays and estuaries, sediment sampling procedures and analytical methodologies must be in accordance with *Water Quality Control Plan for Enclosed Bays and Estuaries of California, i.e. Bays and Estuaries Plan* (SWRCB 2008)
- Marinas located in ocean waters, sampling procedures and analytical methodologies for both sediment and surface water must be in accordance with *the Water Quality Control Plan for the Ocean of California, i.e. Ocean Plan* (SWRCB 2005).

SAP – Sample Handling and Custody

Describes how the samples will be transferred from collection to disposal. Some important elements that must be considered include:

- Maximum allowable holding times from sample collection to extraction or analysis.
- Sample preservation requirements.
- Sample handling (do they need to be frozen, shipped, etc.).
- Chain-of-custody forms and logs.

SAP – Analytical Methods

Describes how the samples will be analyzed by the laboratory. Reference to Laboratory Analytical Method is acceptable.

- All laboratory analytical data must be analyzed by an Environmental Laboratory Accreditation Program (ELAP) certified laboratory for that method at the time the sample is analyzed.

SAP – Quality Control

Describes how the quality of the analytical data will be controlled.

- Reference to Laboratory Quality Assurance Plan is acceptable as long as it is included as an attachment. Laboratory QC samples includes, but is not limited to: matrix spikes, blanks, surrogates, and/or second column confirmation.
- Usually at least one blind duplicate is included for every 10 samples sent to a laboratory for analysis.
- Field and equipment blanks should be used as appropriate (i.e. once per sampling event) to ensure that sampling methods and field equipment are not contaminating samples.

SAP – Instrument/Equipment Testing, Inspection, & Maintenance

Describes how the laboratory testing equipment and their components are tested, inspected, and maintained.

- Reference to Laboratory Quality Assurance Plan is acceptable as long as it is included as an attachment.

SAP – Instrument/Equipment Calibration and Frequency

Describes how the field screening equipment are calibrated in order to maintain performance standards.

- Identify the make, model of instrument/equipment used for data generation or collection activities.
- Specify the precision of the instrument.
- List or reference any standards used for calibration, the calibration procedure and frequency of calibration necessary.
- Describe how calibration records will be maintained.
- Provide any records on service and calibration done by the manufacturer.
- Include equipment manual and any referenced calibration standards as an attachment.

SAP – Non-direct Measurements

Identify any types of data needed to make decisions, such as:

Data bases

Programs

Literature searches

Reports

SAP – Data Management

Describe data management process from field collection activities to laboratory report.

Get laboratory to report data in an electronic spreadsheet so that data entry is eliminated.

Data that is hand entered, needs a data verification step where at least 10% of the data entered by hand are checked against the hard copy, so that data keying errors are minimized.

MONITORING REQUIREMENTS

Daily visual logs – qualitative measurements.

AND

Periodic surface water quality and sediment quality data – quantitative measurements.

Qualitative Data – Daily Visual Observation Log

Every day, the following information must be logged:

- Name and address of Marina.
- Date of observation.
- Name of observer.
- Weather conditions at the time of monitoring.
- Monitoring Station.

Qualitative Data – Daily Visual Observation Log

At each monitoring station, the following must be logged:

- Monitoring station description.
- Visual observations.
- Standardized observations of water clarity using a Secchi disk.
- Standardized observations of water color using a Forel-Ule color scale.

Quantitative Data Collection – Spatial Data Requirements

A subset of the daily visual observation monitoring stations will be used to collect quantitative data. These monitoring stations will be approved in the SAP. At each monitoring station, the following will be recorded:

- A description of the location, including a reference to the Site Map (from MPPP).
- Geographic coordinates (latitude and longitude) will be logged in decimal degrees, to a minimum of 5 significant digits to the right of the decimal point using national geospatial standards.

Quantitative Data Collection – Field Screening Analysis

A field screening analysis shall be conducted and documented at the same monitoring station and time that the surface water analytical samples are collected. The following field screening measurements shall be collected:

- electrical conductivity (EC),
- pH,
- temperature,
- dissolved oxygen (DO)
- total dissolved solids (TDS), and
- chlorophyll.

Quantitative Data Collection – Surface Water Analysis

Table 1. Approved Surface Water Chemistry Analytical Methods

Constituents in Water	Approved Analytical Method	Minimum Reporting Limit
Copper (dissolved)	EPA 200.8	3.1 ug/L
Zinc (dissolved)	EPA 200.8	81 ug/L
Surfactants	TBD	none
organic carbon (dissolved and total)	EPA 415.3	none
Total Kjeldahl Nitrogen (TKN)	EPA 351.3	none
Enterococci	EPA 1106.1	none
Grease & oil	EPA 1664	none

Quantitative Data Collection – Sediment Analysis Using Multiple Lines of Evidence (MLOE)

Sediment quality must be determined using MLOE approach as described in the *Bays and Estuaries Plan (SWRCB 2009)*. This is a three tiered risk-based approach that utilizes:

- Sediment chemistry data.
- Sediment toxicity data.
- Benthic community condition at the marina vs. at reference conditions.

Quantitative Data Collection – Sediment Chemistry and Grain Size Analysis

Table 2. Approved Sediment Chemistry & Grain Size Analytical Methods (all reported on a dry weight basis)

Constituents in Sediment	Approved Extraction/Digestion Method	Approved Determinative Method	Minimum Reporting Limit
Copper (total recoverable & dissolved)	EPA 3050	EPA 6020	34 mg/kg
Zinc (total recoverable & dissolved)	EPA 3050	EPA 6020	112 mg/kg
Polynuclear Aromatic Hydrocarbons (PAHs)		EPA 8270 GC-MS (in SIM mode)	312 ug/kg (HPAH), 85.4 ug/kg (LPAH)
Sediment Grain Size	hydrochloric acid vapors	EPA 9060, 5310 carbonaceous analyzer	N/A

Explanations: LPAH = low molecular weight PAHs, HPAH = high molecular weight PAHs, N/A = Not applicable

Quantitative Data Collection – Sediment Toxicity Methods

Table 3. Approved Sediment Toxicity Test Methods

Test Type / Species	Taxonomic Group	Matrix	Duration (days)	Endpoint(s)
Acute				
<i>Leptocheirus plumulosus</i>	Amphipod	Whole sediment	10	Survival
<i>Rhepoxynius abronius</i>				
Sublethal				
<i>Neanthes arenaceodentata</i>	Polychaete	Whole sediment	28	Growth, survival
<i>Mytilus galloprovincialis</i>	Mussel	Sediment-water interface	2	Embryo development

Spill / Illicit Discharge Log

The Discharger shall log and report all spills or illicit discharges within and from the Marina, including spills or illicit discharges from vessels that are in the Marina for service. The spill or illicit discharge log shall identify:

- time and date of the spill or illicit discharge;
- cause of the spill or illicit discharge;
- materials or wastes involved in the spill or illicit discharge,
- estimated volume of the spill or illicit discharge;
- specific location (consistent with the Site Map) where the spill or illicit discharge originated;
- physical extent or size of the area(s) affected by the spill or illicit discharge;
- public agencies notified; and
- any corrective actions taken.

Analytical Data Assessment Requirements – Enclosed Bay or Estuary

For Marinas located in enclosed bays or estuaries:

- Surface water laboratory analytical data must be tabulated and compared to the applicable *Basin Plan* water quality objectives for **recreational** beneficial use to determine if the use is supported.
- Sediment laboratory analytical data must be tabulated and analyzed using the multiple lines of evidence (MLOE) approach as described in the *Bays and Estuaries Plan (SWRCB 2009)* to determine if sediment quality objectives (SQO) were achieved in order to protect **aquatic life** beneficial use.

Analytical Data Assessment Requirements – Open Ocean

For Marinas located in ocean waters:

- ❖ Surface water laboratory analytical data must be tabulated and compared to the *Ocean Plan (SWRCB 2005)* water quality objectives for **recreational** beneficial use to determine if the use is supported.
- ❖ Sediment laboratory analytical data must be tabulated and compared to either site-specific or published sediment quality guidelines (SQGs), specifically the values for Effects Range-Low (ERL) and Effects Range-Median (ERM) so that **aquatic life** beneficial use is protected.

Annual Assessment of the MPPP

If the Discharger and/or the Regional Board conclude that the water quality objectives are not achieved, then the Discharger or designee shall re-assess the effectiveness of their MPPP by conducting a comprehensive site evaluation. The site evaluation will include, at a minimum, the following:

- A re-assessment of pollutant discharge potential including a revised Site Map.
- A re-evaluation of existing management practice(s), including any new management practice(s) that are necessary in order to protect beneficial uses.
- A schedule for implementing new, or revising existing, management practices.

Reporting Schedule

Table 4. Schedule of monitoring frequency, reporting period, and report due dates.

RELEVANT MRP SECTION Monitoring & Reporting Activities <i>Report Name</i>	YEAR 1	YEAR 2	YEARS 3 - 5
	Monitoring Frequency Reporting Period <i>Report Due</i>	Monitoring Frequency Reporting Period <i>Report Due</i>	Monitoring Frequency Reporting Period <i>Report Due</i>
Section C.1 Daily visual observations. <i>Water Quality Summary Report</i>	DAILY Monthly 15 th of the second month following monitoring, e.g. January monitoring due on March 15 th , etc.	DAILY Monthly 15 th of the second month following monitoring, e.g. January monitoring due on March 15 th , etc.	DAILY Monthly 15 th of the second month following monitoring, e.g. January monitoring due on March 15 th , etc.
Section D.2.a & D.2.b.i Quantifiable water quality data. <i>Water Quality Summary Report</i>	12 TIMES PER YEAR, FROM JANUARY - DECEMBER Monthly 15 th of the second month following monitoring, e.g. May monitoring due on July 15 th , etc.	6 TIMES PER YEAR, FROM MAY – OCTOBER Monthly from July – December 15 th of the second month following monitoring, e.g. May monitoring due on July 15 th , etc.	3 TIMES PER YEAR, FROM MAY – OCTOBER, Bimonthly from July – December 15 th of the second month following monitoring, e.g. May monitoring due on July 15 th , etc.
Section D.2.b.ii Sediment laboratory analytical data. <i>Annual Report</i>	2 TIMES PER YEAR, MAY and OCTOBER Annually April 15 th	ONCE PER YEAR, IN OCTOBER Annually April 15 th	YEAR 3 AND 5, IN OCTOBER Biannually April 15 th of the year following data collection.
Section C Log of any illicit spill or discharge.	VARIES A case-by-case basis. Within 24-hours from the time the Enrollee becomes aware of the circumstances.	VARIES A case-by-case basis. Within 24-hours from the time the Enrollee becomes aware of the circumstances.	VARIES A case-by-case basis. Within 24-hours from the time the Enrollee becomes aware of the circumstances.

Reporting Schedule Version 2 – Risk Based Monitoring Frequency

Threat-Complexity Matrix		THREAT LEVEL		
		1	2	3
COMPLEXITY	A	1A	2A	3A
	B	1B	2B	3B
	C	1C	2C	3C

Complexity:	Number of Boat Slips and/or Moorings (does not include dry docks)
A	> 299
B	100 - 299
C	< 99

Threat Level:	Existing Marina Water Quality
1	TMDL complete with Marinas listed as a source.
2	Marina water body on 2006 or 2008 CWA §303d list for any of the following pollutants: copper and zinc (sediment or water), toxicity (sediment), and/or pathogens/bacteria (water).
3	Marina water body not on 2006 or 2008 CWA §303d list for any of the following pollutants: copper and zinc (sediment or water), toxicity (sediment), and/or pathogens/bacteria (water).

Reporting Schedule Version 2

Table 4. Schedule of monitoring frequency, reporting period, and report due dates.

RELEVANT MRP SECTION	High Risk	Medium Risk	Low Risk
Monitoring & Reporting Activities <i>Report Name</i>	Monitoring Frequency Reporting Period <i>Report Due</i>	Monitoring Frequency Reporting Period <i>Report Due</i>	Monitoring Frequency Reporting Period <i>Report Due</i>
Section C.1 Daily visual observations. <i>Water Quality Summary Report</i>	DAILY Monthly 15 th of the second month following monitoring, e.g. January monitoring due on March 15 th , etc.	DAILY Monthly 15 th of the second month following monitoring, e.g. January monitoring due on March 15 th , etc.	DAILY Monthly 15 th of the second month following monitoring, e.g. January monitoring due on March 15 th , etc.
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Section D.2.b.ii Sediment laboratory analytical data. <i>Annual Report</i>	2 TIMES PER YEAR, MAY and OCTOBER Annually April 15 th	ONCE PER YEAR, IN OCTOBER Annually April 15 th	YEAR 3 AND 5, IN OCTOBER Biannually April 15 th of the year following data collection.
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Reporting Requirements – Spill / Illicit Discharge Report

The Discharger shall verbally report any spill or illicit discharge that may endanger human health or the environment to the Regional Board **within 24 hours from the time the Discharger becomes aware of the circumstances**. The Discharger shall submit a written report within 5 days, containing:

- ❖ The Spill / illicit discharge log (refer to Section D);
- ❖ A description of the spill or illicit discharge and its known or probable cause;
- ❖ The corrective actions taken and the length of time between when the spill or illicit discharge occurred and when it was corrected, include exact dates and times; and
- ❖ If the spill or illicit discharge has not been corrected, include the anticipated time it is expected to be corrected and what corrective actions are necessary.

Reporting Requirements – Water Quality Summary Report

The Discharger shall report in a cover letter any exceedence of water quality objectives. The water quality summary report shall also include:

- water quality data provided in an electronic spreadsheet using the template provided by the Regional Board,
- daily visual observation logs as PDF,
- certified signed copies of laboratory analytical data as PDF,
- field notes from any sampling activities as PDF, and
- equipment calibration records as PDF.

Reporting Requirements – Annual Report

All tabular data and calculations used in the report are to be submitted as an electronic spreadsheet using the template provided by the Regional Board. The annual report shall also contain the following information:

- A summary of the spills or illicit discharges that occurred in or on its leasehold, including: the total number of spills and illicit discharges for the year, the percentages of each type of spill or illicit discharge by activity category, and any efforts the Discharger used to prevent or minimize spills.
- All existing water quality data provided in tabular form with exceedences of water quality objectives highlighted.
- Sediment analytical data in tabular form as well as all certified signed copies of sediment laboratory analytical data as PDF and any field notes from sediment sampling activities.
- Results of data assessment including any supporting documentation, and
- Any revisions to the MPPP based on the analysis of all data, including an implementation schedule of those revisions.

How to Stay Informed:

The lyrics list serve for the marina permit has not been developed. **The solicitation for interested people to join the list will be sent out via through the Coastal Nonpoint Source Program (Proposition 13) as well as Nonpoint Source Pollution Control Program lyrics lists.** To join the lists, please go to:

http://www.waterboards.ca.gov/resources/email_subscriptions/swrcb_subscribe.shtml

Contact:

Molly Munz

Nonpoint Source Pollution Control Program

Division of Water Quality

State Water Resources Control Board

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MMunz@waterboards.ca.gov

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http://www.waterboards.ca.gov/water_issues/programs/nps/reg_solutions.shtml